



OUR MANAGEMENT & TEAM



Turkka Lastunen, CEO, President, Director, Mechanical engineer, Finnish citizen

- 45 Years experience in global forest machinery business, the excellency is related to the dangle forest harvester heads, made over 3000 harvester heads under LAKO brand sold worldwide
- Director of factories, most of the time entrepreneur in own family business but also CEO of Stock market company daugther company and consultant/agent by own company for large manufacturers
- Acting in RDI, as a chief engineer to develop several harvester head product families, applied 13 different patents in harvesting technology
- Knowledge of the global forest machinery market, very wide global network, over 3000 contacts in LinkedIn. Personally generated export sales over 100 million USD, practically to every continent
- Excellent know-how of mechanized harvesting, in plantation eucalyptus and acacia trees debarking since 1985, nowadays expertise of fuel treatment/management operations as well mechanization of oil palm trees harvesting.
- Made technology transfer projects in Europe (Germany, Austria) as well in Canada, Brazil and China, 2 new projects about to start, widery made consultancy of export marketing and sales
- Understanding different cultures, wide language skills, fluent in Finnish, English, Swedish, German and little bit Spanish, has been travelling over 55 countries by now. In United states 27 states by now.





1. THE LAKO X2 RANGE WILL BE MADE IN 30-60 cm SIZES PRODUCTIVITY CHALLENGE TO BE SOLVED IN GLOBAL EUCALYPTUS OPERATIONS:

As realized the single tree feeding, we have been in putting efforts and lot's of thinking and analyses how to help the industry to solve EXISTING productivity increase challenge



This same X2-series head product is suitable from first thinning up to final felling, either used as a single tree or multi tree handling operations, there are already existing and tested 42 (cm) and 52 (cm) models but to be able to handle bigger size of trees and specially enable debarking by double stemming, larger sizes should be design and made and also update the existing 42/52 heads now.



These larger X2 are targeted to be suitable for the Cut-To-Length method as simultaneously debarking two (2) trees effectively at once, mostly also with one pass as well match tree length operations in North America including loading and processor ability. More trees are growing in the slopes.

Also smaller 32 are under construction for smaller scale of vase machines and for thinning operations.



LAKO X2 HEAD HAS A VERY LOW ENERGY DEMAND



Already smaller X2-series products have been developed to meet environmental aspects like advanced energy-efficient hydraulic system of the head to reduce the operating cost and revolutionarily decrease fuel consumption 30 - 45%.

Less CO2 emissions and so impact to our environment.

The key factors are: Exceptional high hydraulic oil flow rate of the main valve (<400 L/min nominal flow)

Feed roller motors are in one circuit and equipped high pressure hydraulic motor with elastic fixation to eliminate both mechanical and hydraulic shocks generated by unequal trees.

Also, this system allows constant contact to different diameter of trees when double stemming. It means steadily contact all way from the butt to top of the tree.

Smaller X2 -series are already tested in certain European countries





2. INNOVATIVE X4 HARVESTER HEAD RANGE, 3 wd



The new product line is TuLako X4 series product line made for modern harvesters characterized low own weight compared it's power

This X4-series are based on well proven over 40 years experience of different versions of LAKO heads.

We will collect all best features of those product series to this new TuLako X4 series product line to meet the increasing demand of efficiency and again save energy to at the logging operations

TuLako advanced multipurpose light built X4 -series

- Represents the most common way of mechanized forest harvesting operations globally both in softwood and hardwoods
- Generally X4 product ranges consist of harvester heads from 65 cm cutting capacity up to 85, even 95 cm as a single tree handling
- The unique part of this product families is their modular construction to enable ultimate efficiency, for all applications, globally and with any kind of base machines.



3.STEMMASTER CONTINUALLY COLLECTING FELLING HEAD

StemMaster products are a unique, totally new felling and continuous collection head, to operate in young forest with small diameter trees as well in fuel management operation (Bio Mass)



The main operation idea is to make selective pre-commercial thinning or first thinning to enable the remaining trees to grow faster and healthy.

StemMaster heads are designed to produce non-limbed energy wood 2-3 times more efficiently than existing solutions thanks to their construction and it's working method compared to conventional single grip biomass grapples.

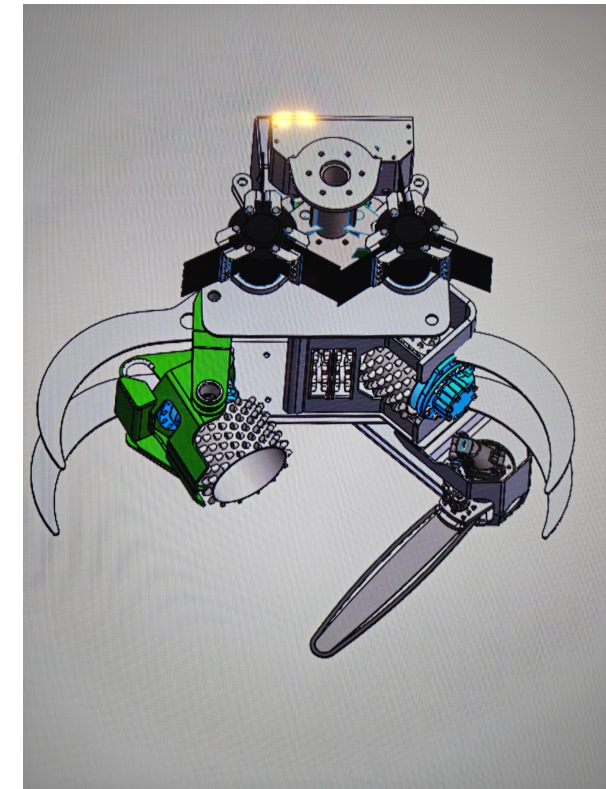
Head cuts the tree with a hydraulically driven disc blade or robust chain saw and moves the trees continuously to the intermediate wood storage situated at the middle of the StemMaster head when trees are still at the standing position.



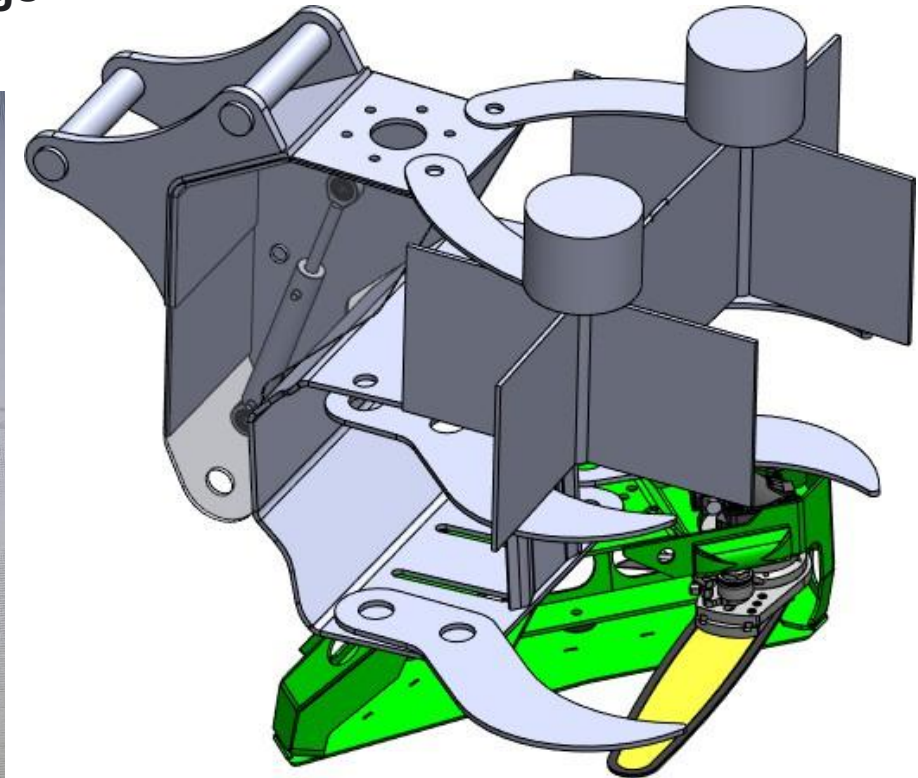
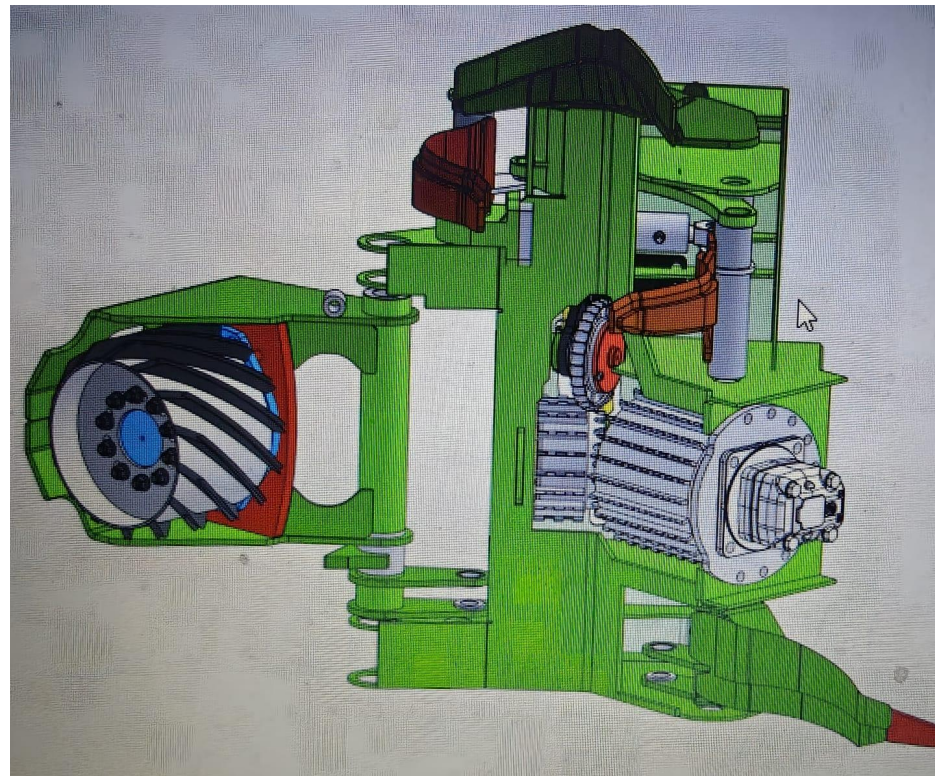
The diameter range or variation of the handled stems is from 1 cm up to 15cm with 250 head and up to 20cm with bigger capacity StemMaster 300.

4.STEMMASTER + HARVESTER HEAD AS A HYBRID VERSION

StemMaster can be also combined with a harvester head in order to expand the ability to handle wider range of different size and type of trees from very small size like biomass up to pulp wood and saw logs



Concept design of small StemMaster Hybrid harvester head.



Concept design of Stemmaster felling style of (tilted or fixed) head.



HISTORY COMPANY-PRODUCT-PERSON INTRODUCTION

Continious operations with innovations and development



Lako 45 and 60 harvester heads from 80's



Modern LAKO 52 harvester head



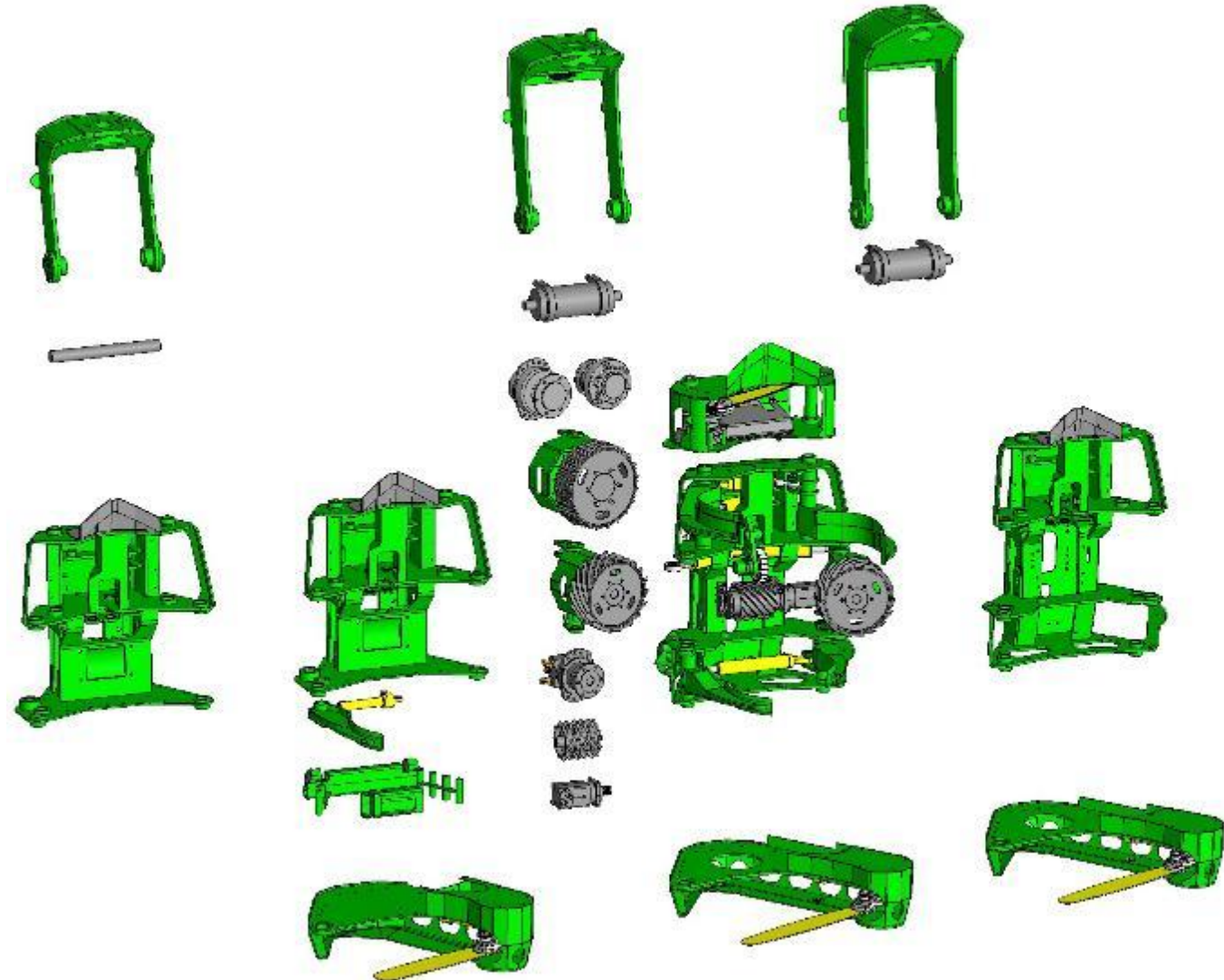
Traditional 3wd LAKO 5-series head

**Dangle harvesting head is now the most common way to do Cut-To-Length around the world
Always intensive activity to solve existing problems like damage free feeding of the tree or
Eucalyptus and Acacia (hardwood) handling, by debarking or semi-debarking (Tanac) method.
Intelligent control and measuring as well high efficient hydraulic systems has been generated.**

Harvester head innovations made by Turkka Lastunen

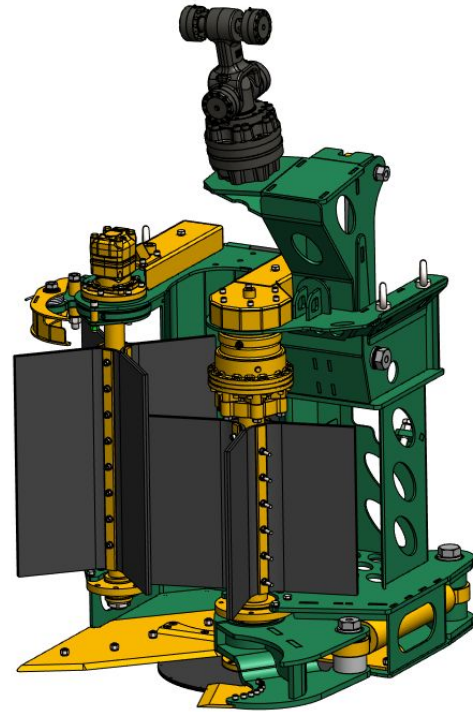
MOTTO:

Modulated construction allows the small manufacturer to be more competitive and flexible as well we can adapt the product to each applications and customer needs more easily and more cost efficiently.





VERSATILE INNOVATIVE MODULATION BY LOW COST



Large 1 meter capacity

StemMaster 300T

LAKO 2-series innovative asymmetric head

Multitree handling

Several new innovations made in order to increase the productivity of logging, mostly globally
Always targeting to get the best but most economical way to built forest machine (Excavators)
Both more versatile but simple structure of the harvesting head as guide like in continuous RDI
Savings of the manufacturing cost by using the modulation and standardization in all design.

Everything started utilizing grapple type feed roller geometry, 1980's



Grapple arm geometry LAKO harvester head with 4 motors / 4wd drive. The very first arm geometry solution

Harvester head with linear 2wd geometry, LAKO 45



Linear linkage arm geometry LAKO harvester head with 2 motors. Suitable for medium trees and debarking

Harvester head with special linear feed roller arm geometry



Linear large up-down movement arm geometry LAKO harvester head with 2 or 4 motors and 3 or 4wd drive. Suitable for all kind and size of the trees, both conifer trees and hardwood debarking.

Harvester head with special linear feed roller arm geometry



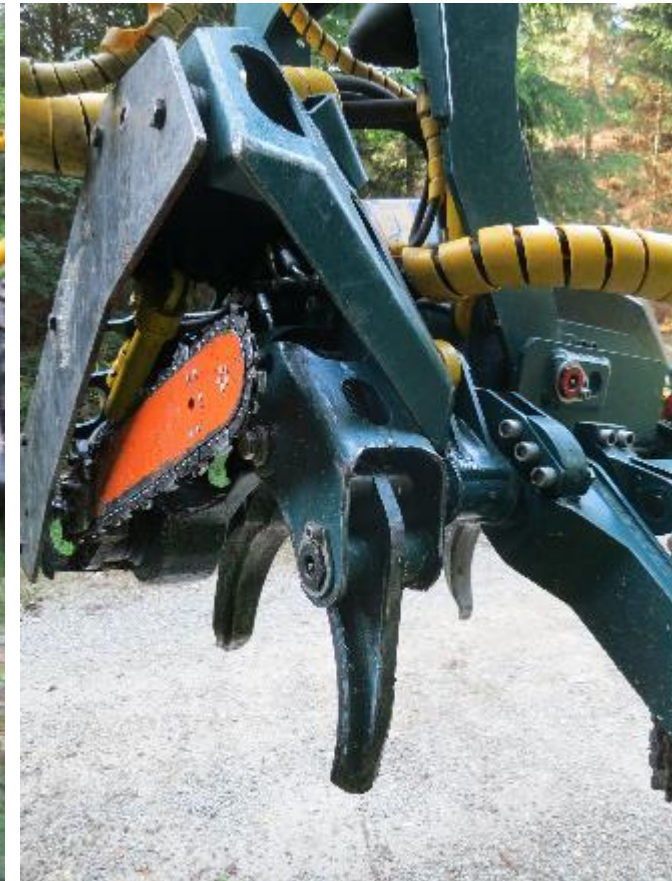
Linear large up-down movement arm geometry LAKO harvester head with 2 or 4 motors and 3/4wd drive. Suitable for all kind and size of the trees, both conifer trees and hardwood debarking, opt. length measuring

Harvester head with triangle feed arm geometry w 4 knives



Triangle arm geometry LAKO harvester head with 4 motors / 3wd drive. Suitable for larger trees and processing

Harvester head asymmetric feed roller arm geometry, 2wd



Asymmetric harvester head both for the conifer or hardwood debarking application. Opt. heavier $\frac{3}{4}$ " saw chain

Content HISTORY OF TURKKA LASTUNEN AND HARVESTER HEADS

Everything started at 1980: There has been several high lights, both ref. products as well in the business



LAKO 80 workshop test in 1983 by Turkka



LAKO 45 and 60 with rubber wheels 1988



LAKO 550 debarking acacia in Asia 2004



LAKO 52 handling a big pine tree in 2013



LAKO 5-series debarking hardwood 2015



StemMaster bioenergy + fuel mng head 2025



OUR WIDE NETWORK OF THE MANUFACTURERS



LAKO 42 HEAD WITH NOVOTNY H50



STROJIRNA NOVOTNY s.r.o. <https://www.loader.cz/en>

Strojírna Novotný s.r.o. is a machine-engineering company specializing in the manufacture of frame component of payloaders, skid steer loaders, forwarders and harvesters.

The company was established in 1991, it has two production plants in the Czech Republic, both close to city of Olomouc.

Strojírna Novotný s.r.o. has been producing forestry equipment since 2004. Novotny focuses to design and manufacturing of small forwarders, which are used in timber forwarding as well small harvesters. Thanks for their light structure they are environment friendly and minimize damages of forest land and reduces the negative impact to the forest ecosystems.

Currently at the company work 100 employees in two plants. All the machines manufactured by Strojírna Novotný s.r.o. have a wide range of applications, from agriculture, through construction to forestry, in very many foreign countries.



OUR WIDE NETWORK OF THE MANUFACTURERS



GREENCHIP A/S, Norager/Hjorring, Denmark

<https://greenchip.dk/en/green-chip-flishugger/>

Green Chip self-propelled chipper. Engine is MB 313 hp (230 kW)

Chipping done directly in the cut rows, by grapple already fallen trees or the loader can be equipped also with a felling head.

Disc diameter is 1200 mm, feeding speed 70m/min, power 20kN

Green Chip 838 CH is built on 8wd forwarder style of machine.

Operating weight is 27.000kg and traction force is 165 kN

It has 23 m3 container but still low ground pressure with 710 tires.

Production is very efficient, production up to 120 m3 chips / hour.

Tipping height 4.78 meter, unloading is possible directly into trailer

There is automatic levelling system for container (± 8 degrees)

The travelling speed is 0-8,3 km/h (1 gear) and 0-25 km/h (2 gear)





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